

CLAIMS

1. A semiconductor element test apparatus comprising;  
a stage on which a semiconductor wafer having semiconductor  
elements is to be mounted;

5 a probe card having a plurality of probe needles opposing the  
semiconductor wafer; and

20 a probe card hold member for holding the probe card; and  
the semiconductor elements are tested by bringing the plurality  
of probe needles into contact with the semiconductor elements of the  
10 semiconductor wafer, wherein

the probe card has a probe card substrate for supporting the  
plurality of probe needles and a reinforcement member for reinforcing  
the probe card substrate, and the reinforcement member has counterbores  
of substantially the same depth and shape in a plurality of mount  
15 positions; and

the probe card substrate is attached to the probe card hold member  
through the reinforcement member at the counterbores by screws.

2. The semiconductor element test apparatus according to claim  
20 1, wherein screws having the same length are used in the respective  
mount positions.

3. The semiconductor element test apparatus according to claim  
1, wherein screws of the same type are used in the respective mount  
25 positions.

4. The semiconductor element test apparatus according to claim  
3, wherein round-head screws having bulging screw heads are used as  
the screws.

5. The semiconductor element test apparatus according to claim  
3, wherein screws formed from a magnetic substance are used as the screws.

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6. The semiconductor element test apparatus according to claim 1, wherein the reinforcement member is attached to the probe card hold member by means of a screw at each of mount positions at respective end sections of a plurality of reinforcement arms, and, in each of the reinforcement arms, a counterbore narrower than the width of the end section of the reinforcement arm is formed in substantially the center of the reinforcement arm with respect to a widthwise direction thereof, as well as in the end section of the reinforcement arm.

7. The semiconductor element test apparatus according to claim 1, wherein the reinforcement member has a peripheral section having the plurality of mount positions, and a center section formed so as to have a thickness greater than that of the peripheral section.

8. The semiconductor element test apparatus according to claim 1, wherein the reinforcement member comprises a peripheral section having a plurality of reinforcement arms, each reinforcement arm having the mount position, and a frame-shaped center section, and a reinforcement piece for two interconnecting mutually-opposing sides of the frame-shaped center section is provided in the center section.

9. The semiconductor element test apparatus according to claim 1, wherein the reinforcement member has a peripheral section having the plurality of mount positions and a center section located at the center of the peripheral section, and the reinforcement member and the probe card substrate are fastened to each other in the center section.

10. A method of testing a semiconductor element through use of a semiconductor element test apparatus which brings a plurality of probe needles provided on a probe card into contact with semiconductor elements of a semiconductor wafer, wherein

the probe card has a probe card substrate for supporting the plurality of probe needles, and a reinforcement member to be used with the probe card substrate;

the semiconductor element test apparatus has a probe card hold member having the probe card attached thereto;

the reinforcement member is attached to the probe card substrate and to the probe card hold member at a plurality of mount positions, by means of screws;

counterbores of substantially the same depth and shape are formed in the respective mount positions on the reinforcement member; and

the probe card substrate is attached to the probe card hold member by means of the screws and by way of the counterbores.



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